



# Soil Loading System

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## TOOLS:

- [Angle grinder \(1\)](#)
- [Spray paint \(1\)](#)
- [Vise clamps \(1\)](#)
- [Welder \(1\)](#)
- [c clamps \(1\)](#)
- [torch \(1\)](#)
- [various wrenches \(1\)](#)



## PARTS:

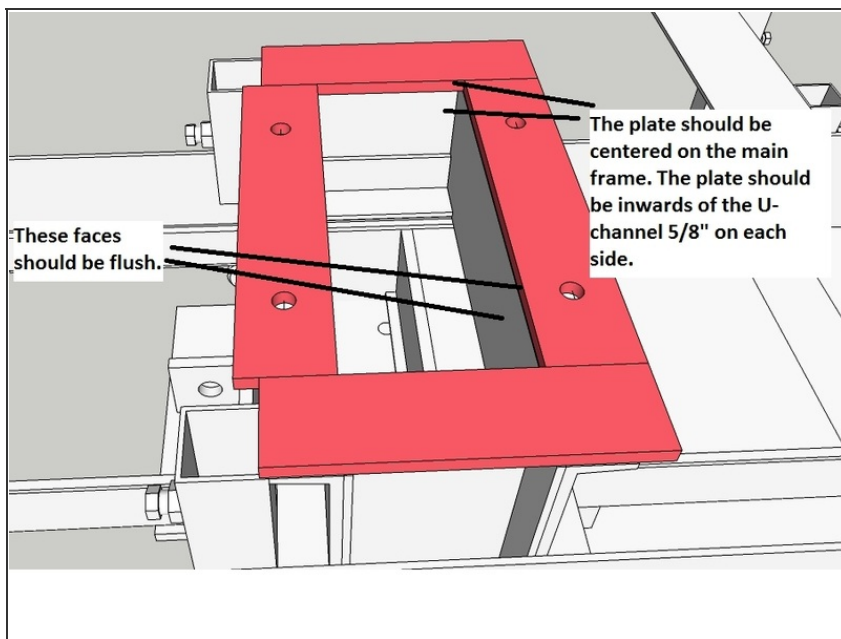
- [3/4" galvanized nuts \(10\)](#)  
*4 for hopper mount 4 for mounting the shaker, 2 for the bottom on grate supports*
- [1/2" lock nuts \(2\)](#)  
*for the grate to hopper supports*
- [1/2" nuts \(2\)](#)  
*for the hopper to hopper supports*
- [3/4"x1.5" bolts \(8\)](#)  
*4 for hopper mounting plate, 2 for shaker mount, 2 for grate supports*
- [3/4"x2.5" bolts \(2\)](#)  
*for top of grate supports to grate*
- [1/2"x2.5" bolts \(2\)](#)  
*for grate to hopper supports*
- [1/2"x3" bolt \(2\)](#)  
*for hopper to hopper supports*
- [1/2" washers \(8\)](#)  
*4 for hopper to hopper supports, 4 for grate to hopper supports*

- [3/4" washers \(6\)](#)  
*4 for grate to hopper supports, 2 for grate to grate supports*
- [1/2"x1" Bolts \(4\)](#)  
*For dirt deflector to grate*

## SUMMARY

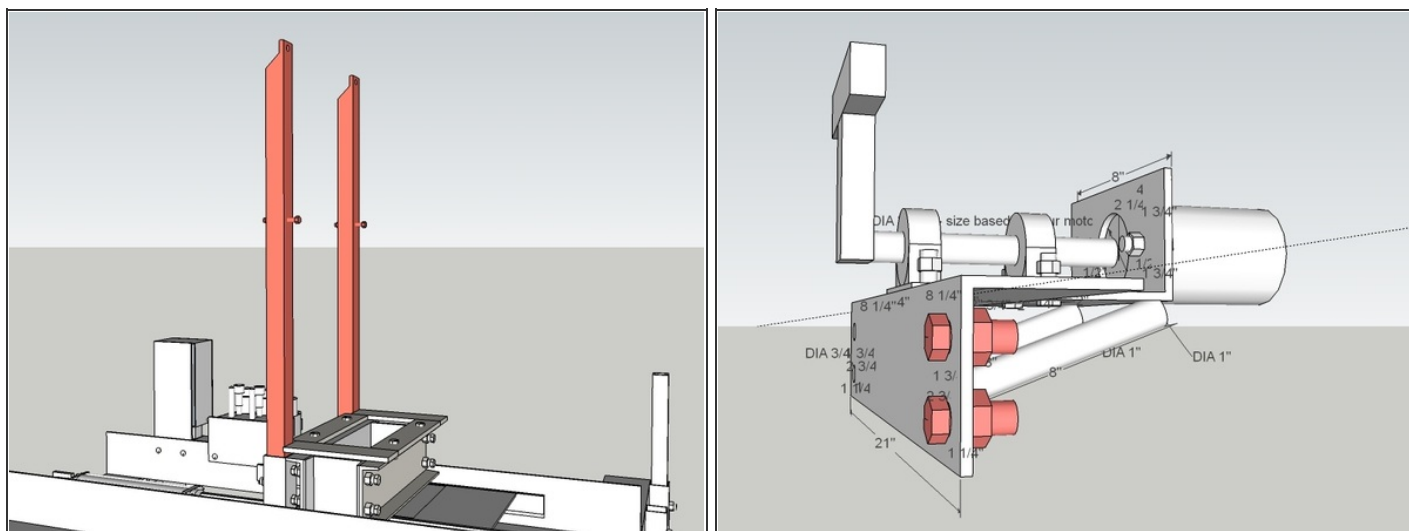
You must have finished assembling the main frame before you install the soil loading system.

### Step 1 — Torch the holes for the hopper mounting plate



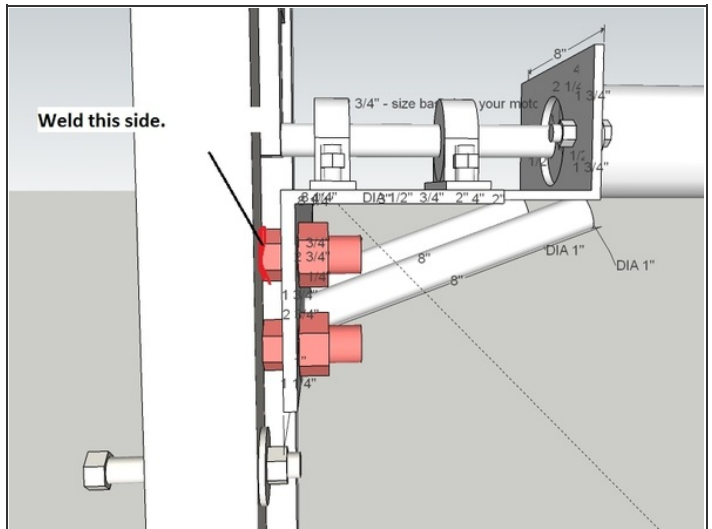
- Clamp the hopper mounting plate to the top of the main frame, positioned as shown, with the cutaways positioned by the leg holders.
- Clamp it so that the side you grinded down the welds on is touching the main frame.
- Torch the holes thru to the main frame.
- Check that the fit is good by putting bolts in all the holes.
- Grind away all the slag.
- Bolt the mount to the frame.

## Step 2 — Install hopper supports and prepare shaker mount.



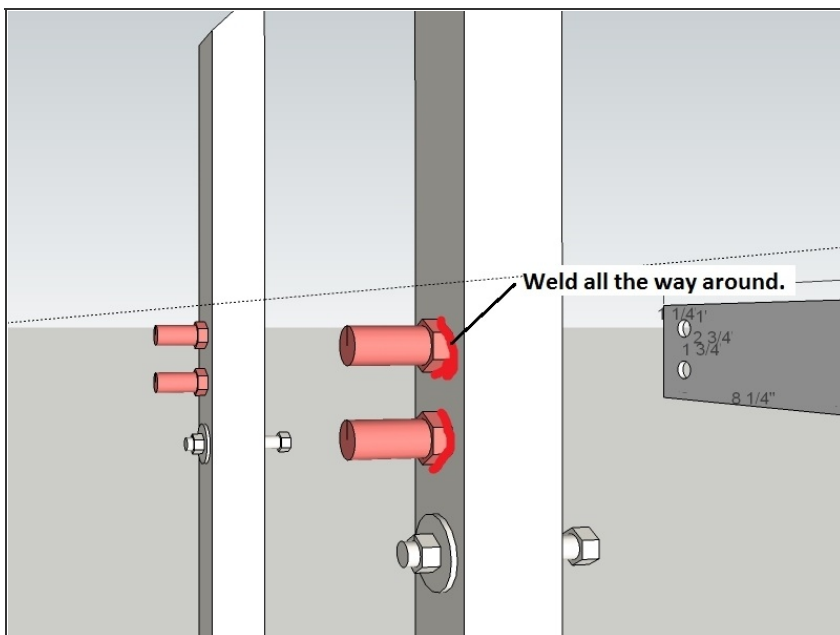
- Install the hopper supports into the leg holders.
  - Make sure you put the support with bolts on it on the correct side (refer to your shaker motor and look where you marked it.)
  - Their bottom side should be flush with the bottom of the leg holders on the frame.
  - Make sure they are orientated correctly. See photo.
- On the side of the shaker motor that you didn't weld bolts for, put a bolt (3/4"x1.5") thru both holes and tighten nuts onto them.
  - The nut should be on the side of the mount that the motor will be installed to. (see photo)

### Step 3 — Tack shaker bolts to hopper support



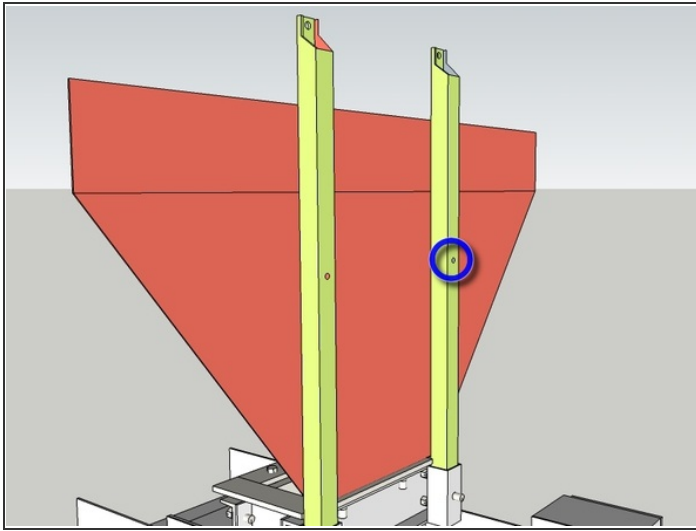
- Place the shaker onto the bolts already welded to the hopper supports.
- Clamp the other side to the hopper support.
  - Use a square to make sure the shaker mount is square with the hopper supports.
- Tighten nuts onto the side with the welded bolts.
- Tack the bolts to the hopper support.
  - Make sure you tack them to the hopper support, NOT the shaker mount.
  - Tack as much as you can from this position.

### Step 4 — Weld shaker bolts.



- Loosen all the nuts and remove the shaker.
- Protect the threads on the bolts.
- Weld all the way around the bolt to the hopper supports.
- Don't remount the shaker yet.

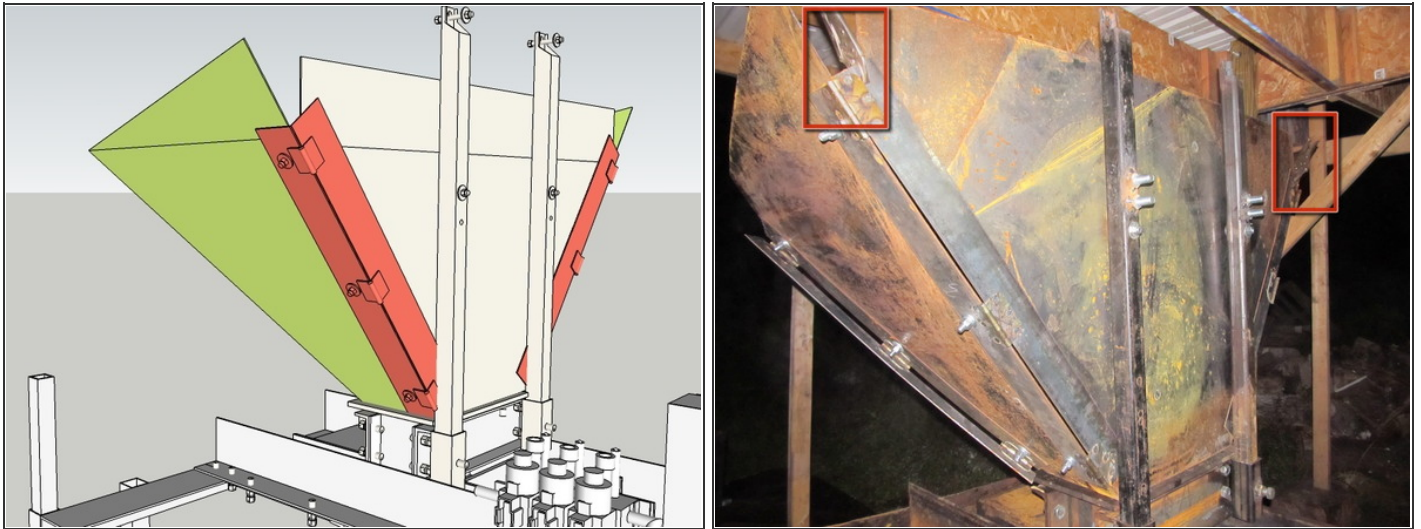
## Step 5 — Clamp the hopper back to supports and torch holes



- Clamp the 34" tall hopper back to the hopper supports.
  - It should be centered horizontally between them, and touching the supports all the way down to the hopper mounting plate.
- Torch through the holes circled in the diagram, so you torch through the hopper sheet metal.
  - Torch through it on each side, just enough so you have 2 small holes.
- Un-clamp the sheet metal and torch 1/2" holes for the bolt.



## Step 6 — Remount the first plate, and prepare to weld



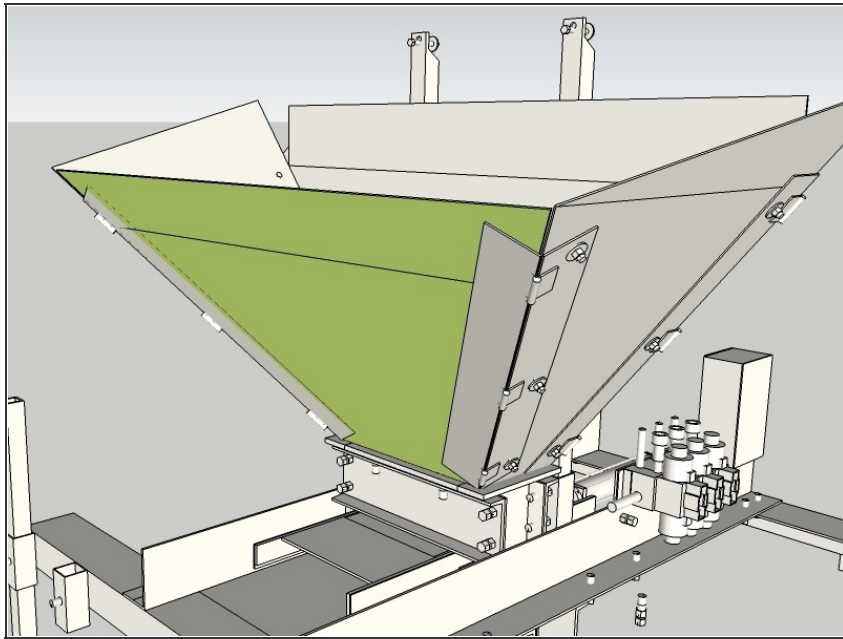
- Grind off the slag from the torching.
- Mount the first plate back to the hopper supports.
  - Use a 1/2"x3" bolt and a nut with washers on each side.
- Lift the side pieces and clamp them to the first plate via the hinge plates.
  - Minimize the gap between them as much as you can by pushing them together tightly.

## Step 7 — Weld the hinge plates to the back piece



- Weld it about 50%, as no more is necessary.
- Weld in 3-4 inch sections.

## Step 8 — Clamp and weld the front piece



- Clamp the final piece in place to the other side of the side pieces.
- Yet again, minimize the gap between the two.
- You may need somebody to get inside of the hopper and push out so you can clamp it well.
- Weld the last piece like you welded the first one.

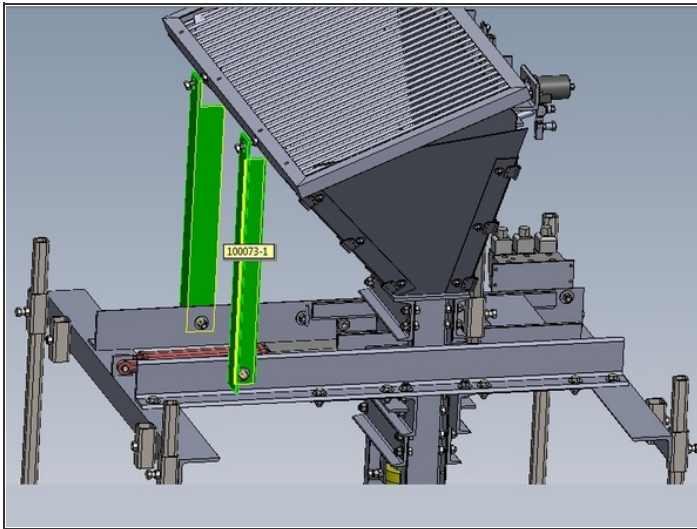
## Step 9 — Place the grate and bolt it to the hopper supports



- Get a friend or two and lift the grate on top of the hopper.
- The front end (with the slots) should be as shown, and the grate should be inside of the hopper on the other side (the side with the nuts).
- Have your friend hold the grate in place for the next step, or use C-Clamps to clamp the grate to the supports.
- Bolt the grate to the hopper supports (1/2"x 2.5" bolt and lock nut). Bolt both loosely, and then tighten them.
- You'll need 2 washers on each side, as the holes are slots and a 1/2" washer will be too small to prevent the washer from warping. Use a 3/4" washer as the other one.
- You may want to use a large nut in place of a washer on the hopper support side. (see photo)

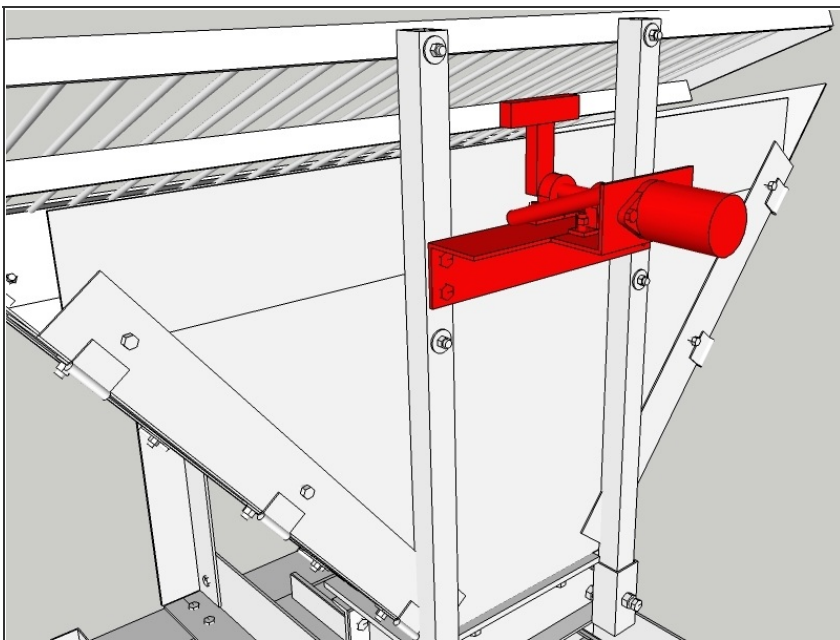


## Step 10 — Install the grate supports



- Loosely bolt the grate supports to the primary arms
- Bolt (3/4"x2.5" bolt) The grate mounts through the hopper to the grate.
  - Use a 3/4" washer where the bolt goes thru the grate support.
- Tighten all bolts

## Step 11 — Re-install the shaker



- [Install the motor](#) on the shaker motor mount if you haven't already.
- Place it on the bolts on the hopper supports.
  - If for some reason it doesn't fit, torch away whatever metal is preventing it.
- Tighten nuts onto it.

## **Step 12 — Install the Dirt Deflector Plate**

- Bolt it to the grate.

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